VII. *Supplementary Observations on the* Sphæriæ *of the Hookerian Herbarium.*

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THE present paper is intended as a supplement to two previous communications on the same subject, published in the 22nd volume (pp. 257, 313) of the Society's Transactions; and its object is to point out which of the species there figured have been described from authentic specimens, and, with regard to the non-authentic specimens, to state by whom the plants have been named. As this paper was on the point of going to the press, Sir William Hooker's long and distinguished career was brought to a close; and I must therefore express to Dr. Hooker alone my gratitude for the liberality and kindness shown to me by his lamented father and himself in affording me every opportunity for a careful reexamination of their valuable collection. I wish also to offer my thanks to Mr. Berkeley for his obliging assistance in determining the handwriting on several of the specimens.

It will be seen upon examination of the following particulars, that the Herbarium contains a large number of authentic specimens, besides many which, without being absolutely authentic, are almost, if not quite as valuable, from having been identified by Fries, and published by him in the 'Scleromycetes Sueciæ,' or described in the 'Systema Mycologicum.' The other specimens have for the most part been named by Sir William Hooker, Mr. Berkeley, Dr. Greville, or Dr. Klotzsch, botanists whose opinions will be accepted with confidence by all mycologists.

In the 'Botanische Zeitung' for 1864, p. 189, Fries has published some "Adnotata" on some of the species described in my previous papers, which it will be useful to notice as I proceed.*

I have adopted the usual plan of placing the mark (!) against the names of those plants of which the Herbarium contains authentic specimens.

A. COMPOSITÆ.

Div. 1. Cordyceps.

1. S. (Cordyceps) Gunnii, Berk.!
2. S. (Cordyceps) militaris, L. Collected by Carmichael, and named by Klotzsch. There can be no doubt about this species.
3. S. (Xylaria) pileiformis, Berk.! Mr. Berkeley considers this plant intermediate between *Cordyceps* and *Poronia*. Fries (Summa Veg. Sc. p. 382, and Novæ Symb. Myc. p. 113) speaks of it as a Poronia. Tulasne (Sel. Fung. Carp. vol. ii. p. 29) thinks it may form the type of a separate genus, and notices some points of resemblance to *Xylaria pedunculata*, Dicks.

* Adnotata ad cel. Fr. Currey Dissertationem: Synopsis, &c.

4. S. (Xylaria) pedunculata, Dicks. A British specimen named by Berkeley.
5. S. (Cordyceps) entomorrhiza. British specimens named by Berkeley.
6. S. (Cordyceps) ophioglossoides, Ehrh. Specimens named by Mougeot and Klotzsch.
7. S. (Xylaria) involuta, Kl.!
8. S. (Xylaria) Guianensis, Mont.! (Syll. p. 202).
9. S. (Cordyceps) capitata, Holmsk.; Fr. S. M. vol. ii. p. 324. Specimens named by Mougeot.
10. S. (Hypoxylon) Cœnopus, Mont.! Fries (Adnotata) remarks, "Fons: Fr. in Linn. v. p. 542, inter Hypoxyla nec ad Xylarias."
11. S. (Xylaria) polymorpha, Pers.; Fr. S. M. vol. xi. p. 326. British specimens named by Berkeley. The measurement of the sporidia given in my former paper is wrong; it should have been 0·0008 to 0·0009 inch.
12. S. (Hypoxylon or Poronia) Heliscus, Mont.! (Syll. p. 209.)
13. S. (Hypoxylon) rhopaloides, Mont.!
14. S. (Hypoxylon) crenulata, Berk.! Decades, no. 484. This seems a true Hypoxylon; but the fructification is very unusual, for in that genus the sporidia are unilocular.
15. S. (Xylaria) digitata, Pers.; Fr. S. M. vol. ii. p. 326. Specimens named by Mougeot.
16. S. (Xylaria) Hypoxylon, L.; Fr. S. M. vol. ii. p. 327. There are many specimens of this in the Herbarium. It is a species as to which there can be no doubt.
17. S. (Xylaria) microceras, Mont.!
18. S. (Xylaria) multiplex, Kunze. Named by Klotzsch.
19. S. (Xylaria) corniformis, Mont.! Fries (Adnotata) remarks, "Fons: Fr. Elench. ii. p. 37, Summ. Veg. Scand. Montagnei forma, ad hanc relata, videtur species diversa."
20. S. (Xylaria) ianthino-velutina, Mont.! (Syll. p. 204).
21. S. (Xylaria) carpophila, Pers.; Fr. S. M. vol. ii. p. 328. Described, I think, from a specimen given me by Mr. Berkeley. The one in the Herbarium has no fruit.
22. S. (Cordyceps) alutacea, Pers. Collected by Mr. Broome at Rudloe in Wiltshire, and named by Mr. Berkeley. Fries (Adnotata) remarks, "In Summ. Veg. Sc. hanc speciem inter Cordicipites et Hypocreas intermediam esse monui; illarum receptaculum, forma, vegetatio, harum asci et sporæ. Nonnullas examinans exoticas *Fracidias* (S. V. Sc. p. 382) quæ genus a Xylariis omnino autonomon sistunt, cum his plane convenire observavi; differt modo colore lætiore, ut *Cordiceps militaris* ab *ophioglossoide*. Fracidiæ plures æque molles et fragiles ac *F. alutacea*."
23. S. (Hypoxylon) Sagræana, Mont. This is a Cuba specimen from Kunze, but I have compared it with an authentic specimen from Dr. Montagne.
24. S. (Cordyceps) purpurea, Fr.

25. S. (Cordyceps) microcephala, Tul. I have described this and the last plant from my own specimens. The species cannot be mistaken.

* 26. S. (Cordyceps) Robertsii, Hook.!

26 *a*. S. (Cordyceps) typhina, Pers.; Fr. S. M. ii. p. 553. Described from my own specimens. It is a well-known species. Fries (Adnotata) remarks, "Valde lætamur cel. Auctorem hujus nexum cum Cordicipitibus confirmasse. In statu vigente *semper, verticalis*, et asci et sporæ omnino *C. militaris*.!"

Div. 2. Poronia.

27. S. (Poronia) punctata, Sow. Swan River specimens named by Berkeley.

Div. 3. Pulvinatæ.

28. S. (Hypoxylon) multiformis, Fr. S. M. ii. p. 334! Scleromycetes Sueciæ, n. 44.

29. S. (Hypoxylon) durissima, Schweinitz. Klotzsch has marked this "S. durissima, *Sz.*;" but it is marked *S. annulata*, by Schweinitz himself. The species only differs from *S. multiformis*, Fr., in the *annulato-marginate* disk at the apex of the perithecia, and it may be doubted whether this is a sufficient specific distinction. The character cannot be seen without a lens.

30. S. (Hypoxylon) fragiformis, Pers.; Fr. S. M. ii. p. 332. From the Scleromycetes Sueciæ, nos. 41 B. and 41.

31. S. (Hypoxylon) annulata, Mont. (*β. depressa*), Mont.! (Sylloge, p. 213). Fries (Adnotata) remarks, "Fons est Fr. Elench. ii. p. 64, c. var.; cfr. Nov. Symb. Myc."

32. S. (Hypoxylon) concentrica, Bolt.; Fr. S. M. ii. p. 331. Named by Klotzsch.

33. S. (Hypocrea) gelatinosa, Tode; Fr. S. M. ii. p. 336. This is the fructification in a specimen from Tunbridge Wells in my own herbarium, and in one from Massachusetts given me by Mr. Bloxam. All the Kew plants are barren.

34. S. (Hypoxylon) vernicosa, Schwein. Named by Berkeley.

35. S. (Hypoxylon) argillacea, Fr. Obs. i. t. 2. f. 5. Named by Berkeley.

36. S. (Hypocrea) rufa, Pers.; Fr. S. M. ii. p. 335. Named by Klotzsch. The plants look black to the naked eye, but under a lens the red tinge of the fresh condition is quite perceptible.

37. S. pruinata, Kl. Linn. vol. viii. p. 489. Marked "*S. farinosa*, n. sp." by Klotzsch. Quære if identical with *S. pruinata*, Kl.?

38. S. (Hypoxylon) fusca, Pers.; Fr. S. M. ii. p. 332. From the Scleromycetes Sueciæ, No. 42.

39. S. (Hypoxylon ?) parmularia, Berk.; from the Fungi Pyrenæi. The plant marked *Sphæria parmularia* by Mr. Berkeley is certainly an Hypoxylon, and, I think, not distinct from *S. cohærens*, P.; but there seems to have been some mistake; I suspect that the label of this plant belongs to no. 167 *post*, and *vice versâ*.

40. S. (Hypoxylon) cohærens, Pers.; Fr. S. M. ii. p. 335. From the Scleromycetes Sueciæ, no. 43.

41. S. (Hypoxylon) rubricosa, Fr. El. ii. p. 63. Named by Berkeley. I doubt if this plant is rightly named; but it is sometimes difficult to distinguish between *Hypoxylon cohærens*, *H. multiforme*, and *H. rubricosum*.

Div. 4. Connatæ.

42. S. (Hypoxylon) rubiginosa, Pers.; Fr. S. M. ii. p. 340. From the Scleromycetes Sueciæ, no. 142. The sporidia are sometimes curved in a side view.

43. S. (Hypoxylon) atro-purpurea, Tode; Fr. S. M. ii. p. 340. From the Scleromycetes Sueciæ, no. 75.

44. S. (Hypoxylon) perforata, Schwein.! Fr. S. M. ii. p. 340.

45. S. botryosa, Fr. S. M. ii. p. 342! From the Scleromycetes Sueciæ.

46. S. (Hypocrea) lateritia, Fr. S. M. ii. p. 338. These specimens are from Mr. Stephens's herbarium. In Rabenhorst's 'Fungi Europæi,' no. 317, the sporidia are the same except that in most the endochrome is bipartite, giving them a uniseptate appearance. I see no reason now to think that they become brown in age, as suggested in my former paper.

47. S. (Hypoxylon) serpens, Pers.; Fr. S. M. ii. p. 341. From the Scleromycetes Sueciæ, no. 47.

48. S. (Hypocrea) hyalina, Schwein.! Fr. S. M. ii. p. 339.

49. S. (Hypoxylon) Sassafras, Schwein.! Fr. S. M. ii. p. 343.

50. S. (Hypocrea) citrina, Pers.; Fr. S. M. ii. p. 337. Named by Schweinitz.

51. S. (Hypocrea) lobata. Named by Schweinitz. Fries (Adnotata) remarks, "*Sph.* s. *Hypocrea lobata*, Schwz.; minime vero Wormskj. et Fr. S. M. Est *Hypocrea Schweinitzii*, Fr. El. ii. p. 60, c. synon. supra citato."

52. S. (Hypocrea) luteo-virens, Fr. S. M. ii. p. 339. From a specimen named by Mr. Broome. The Kew plants have no fruit. I doubt whether *Hypocrea luteovirens*, Fr., *S. lateritia*, Fr., and *S. lactifluorum*, Schwein., are not all one species.

Div. 5. Glebosæ.

53. S. (Hypoxylon) repanda, Fr. S. M. ii. p. 346! From the Scleromycetes Sueciæ, no. 1.

54. S. (Hypoxylon) tubulina, A. and S.; Fr. S. M. ii. p. 346. From the Scleromycetes Sueciæ, no. 341. I think this is a Diatrype, not an Hypoxylon.

55. S. (Hypoxylon) lutea, A. & S.; Fr. S. M. ii. p. 347. Figured from plants in my own herbarium named by Berkeley, but which are certainly the same as *S. tubulina*, suprà.

56. S. (Hypoxylon) deusta, Hoffm.; Fr. S. M. ii. p. 345. From the Scleromycetes Sueciæ, no. 261.

57. S. (Hypoxylon) fuscospora, Schwein.!

58. S. (Hypoxylon) nummularia, Bull.; Fr. S. M. ii. p. 348. Named by Klotzsch.

59. S. (Hypoxylon) marginata, Fr. El. ii. p. 69. Figured from South Carolina specimens given me by Mr. Berkeley. It is not, I think, distinct from *S. annulata*, suprà., of which it seems to be a small form.

Div. 6. Lignosæ.

60. S. (Hypoxylon) uda, Pers.; Fr. S. M. ii. p. 358. Figured from plants in my own herbarium, which agree externally in every respect with a specimen from the Scleromycetes Sueciæ, no. 324. I could not have dissected the latter without injury.

61. S. (Diatrype) disciformis, Hoffm.; Fr. S. M. ii. p. 353. From the Scleromycetes Sueciæ, no. 71.

62. S. (Diatrype) flavovirens, Hoffm.; Fr. S. M. ii. p. 357. From the Scleromycetes Sueciæ, no. 222.

63. S. (Diatrype) platystoma, Schwein.! Fr. S. M. ii. p. 351. Upon reconsideration, the points of distinction between this and *S. stigma*, Hoffm., mentioned in my former paper are hardly reliable. Fries's specimen of *S. stigma* has a rimose stroma, and the ostiola do not differ substantially from those in the latter species.

64. S. (Hypoxylon) Vogesiaca, Pers. in litt. Sent by Persoon to Mougeot.

65. S. (Hypoxylon) virgultorum, Fr.! S. M. ii. p. 351, El. ii. p. 71.

66. S. (Diatrype) atro-punctata, Schwein.! Fr. S. M. ii. p. 351.

67. S. (Diatrype ?) rhois, Schwein.! Fr. S. M. ii. p. 356.

68. S. (Diatrype) Liriodendri, Schwein.! Fr. S. M. ii. p. 356.

69. S. (Diatrype) capnodes, Berkeley!

70. S. (Hypoxylon) melanaspis, Mont.! Sylloge, p. 215.

71. S. (Diatrype) dryophila, Curr.!

72. S. (Diatrype) nucleata, Curr.!

73. S. (Diatrype or Valsa) varians, Curr.!

74. S. (Diatrype or Valsa) denigrans, Curr.!

75. S. (Diatrype) inæqualis, Curr.!

76. S. (Diatrype) Badhami, Curr.!

77. S. (Diatrype) verrucæformis, Ehr.; Fr. S. M. ii. p. 355. Drawn from specimens in my herbarium, which agree externally with a plant from Scleromycetes Sueciæ, no. 74, in the Hookerian herbarium. The latter has no fruit. Very different things have been published under the name of *S. verrucæformis*. M. Duby tells me that

his specimens from the Scleromycetes Sueciæ, no. 74, have elliptical dark-coloured sporidia, and that Desm. Exs. ed. 1, 1272, is the same.

78. S. (Diatrype) favacea, Fr. S. M. ii. p. 354.

79. S. (Diatrype) aspera, Fr. S. M. ii. p. 354. From plants named by myself. I have seen no other specimens.

80. S. (Diatrype) stigma, Hoffm.; Fr. S. M. ii. p. 350. From the Scleromycetes Sueciæ, no. 46.

81. S. (Diatrype) bullata, Ehr.; Fr. S. M. ii. p. 349. From the Scleromycetes Sueciæ, no. 46.

82. S. undulata, Pers.; Fr. S. M. ii. p. 350. Named by Berkeley.

83. S. (Hypocrea) lenta, Schwein.! Fr. S. M. ii. p. 349. The name "Tode," after this plant in my former paper is a mistake. *S. lenta*, Tode, seems distinct from *S. lenta*, Schwein. I do not know the former plant. Fries (Adnotata) remarks, "*Sph.* s. *Hypocrea lenta*, Schwz. Non Tode et Fr. S. M., quæ *Diatrypes* species. Est *S. rigens*, El. ii. p. 61, ubi hanc et præcedentem inter *Hypocreas* descripsi, et in S. V. Sc. has duas species expressis verbis ad *Hypocreas* retuli. Nullus igitur exstat inter nos de harum loco systematico dissensus."

Div. 7. Versatiles.

84. S. (Diatrype) scabrosa, Dec.; Fr. S. M. ii. p. 360. Named by Berkeley, but it is certainly *S. pulvis-pyrius*, Pers. The size of the fruit is only rather larger than usual.

85. S. (Diatrype) podoides, Pers. Syn. p. 22, excl. syn. Named by Mougeot. Probably received by him from Persoon, as the next certainly was.

86. S. podoides, var. lævis, Pers.! in litt. to Mougeot.

87. S. (Diatrype?) petiginosa, Fr.! in litt. to Mougeot.

88. S. (Diatrype) leprosa, Pers.! Fr. S. M. ii. p. 365.

89. S. (Diatrype) strumella, Fr.! S. M. ii. p. 365. From the Scleromycetes Sueciæ, no. 115. The curvature or non-curvature of the sporidia probably depends upon the aspect in which they are viewed.

90. S. (Diatrype) radicalis, Schwein.! Fr. El. ii. p. 73.

91. S. (Diatrype) quercina, Pers. This plant and no. 170 *post* (*Valsa arcuata*), are probably the same, and quite distinct from *S. quercina*, Pers., which is closely allied to, even if it be distinct from, *S. verrucæformis*, Ehrh. See the supposed distinctions pointed out by Tulasne, in Sel. Fung. Carp. vol. ii. p. 99.

92. S. (Diatrype) lanciformis, Fr.! S. M. ii. p. 362. From the Scleromycetes Sueciæ, no. 73.

93. S. (Diatrype) Hystrix, Tode; Fr. S. M. ii. p. 364. Named by Berkeley, but he has since said that the specimen here described, which is an Italian plant from De Notaris, is not *S. Hystrix*. See Ann. Nat. Hist. May, 1859.

94. S. (DIATRYPE) CERATOSPERMA, Tode; Fr. S. M. ii. p. 364. Named by Berkeley. This is a little-known species. M. Duby has remarked to me concerning it, "Species admodum controversa. Tot auctores tot specimina." Tulasne considers the plant here described to be *S. ceratosperma* of Mougeot and Nestler, and that *S. ceratosperma* of Tode, "fortassis non longe recedat." See Sel. Fung. Carp. vol. ii. p. 191.

95. S. (DIATRYPE) FERRUGINEA, Pers.; Fr. S. M. ii. p. 363. From the Scleromycetes Sueciæ, no. 305.

96. S. (DIATRYPE) NIGERRIMA, Bloxam, MS.! This plant belongs to the *Cæspitosæ*. See Mr. Berkeley's remarks in Ann. Nat. Hist. May, 1859.

97. S. (DIATRYPE) IRREGULARIS, Sow. "*S. gastrina*," Fr. is in Mr. Berkeley's handwriting; but it is doubtful whether the two are identical.

98. S. (DIATRYPE) MOUGEOTII, Pers.! in litt. to Mougeot. Fries (Adnotata) remarks, "*Sph.* s. *Diatrype Mougeotii* non est *Sph. Mougeotii*, Fr. El. p. 100, sed meo sensu, var. *Sph. Hystricis*, El. p. 74."

Div. 8. CONCRESCENTES.

99. S. FIBROSA, Pers.; Fr. S. M. ii. p. 384. The specimens at Kew have no fruit. A plant in my herbarium, given me by Mr. Berkeley, has the fruit here described. It seems to be the same thing as *S. extensa*, no. 119 *post*.

100. S. DEPRESSA, Fr.; Montagne, Sylloge, p. 232!

101. S. PARALLELA, Fr. S. M. ii. p. 373! Scleromycetes Sueciæ, no. 3.

102. S. (DIATRYPE) LEIOPLACA, Fr.! S. M. ii. p. 370.

103. S. FIMETI, Pers., var. *equina*. Named by Montagne. Fries (Adnotata) remarks, "Ex ascis et loco fingimus hanc pertinere ad *Sph. equinam*, Fr. apud Mont. et S. V. Sc., quæ a *Sph. fimeti* plane diversa.

104. S. (DIPLODIA) DIOSPYRI, Schwein.! Fr. S. M. ii. p. 372.

105. S. VELATA, Pers.; Fr. S. M. ii. p. 375. From the Scleromycetes Sueciæ, no. 225.

106. S. (DIATRYPE) DISCINCOLA, Schwein.! Fr. S. M. ii. p. 368.

107. S. (DIATRYPE) MILLIARIA! Fr. S. M. ii. p. 370. From the Scleromycetes Sueciæ, no. 113.

108. S. (SPHÆRIA) LIMÆFORMIS, Schweinitz! Fr. S. M. ii. p. 369.

109. S. (SPHÆRIA) SPINOSA, Pers.; Fr. S. M. ii. p. 368. I am uncertain from which specimen this was described. There are several in the herbarium, but I could find no fruit on reexamination except in one named by Klotzsch, which does not quite agree with the description here. Tulasne agrees with Fries in considering *S. limæformis*, Schwein., hardly different from *S. spinosa*, Pers.

110. S. ELEVATA, Berk.!

111. S. (DIATRYPE) LATA, Pers.; Fr. S. M. ii. p. 369. Named by Klotzsch.

112. S. (Sphæria) spiculosa, Pers.; Fr. S. M. ii. p. 369. Named (I think) by Klotzsch.

113. S. (Valsa) monadelpha, Fr. S. M. ii. p. 382. Named by Berkeley.

114. S. (Diatrype or Valsa) æquilinearis, Schwein.! Fr. S. M. ii. p. 374.

115. S. (Sphæria) discutiens, Berk.! Engl. Fl. p. 245.

116. S. stipata, Currey, Phil. Trans. 1857. This is identical with *S. dissepta*, Fr. I have since compared it with an authentic specimen from the Scleromycetes Sueciæ, and with authentic specimens given me by Dr. Montagne and M. Duby.

Div. 9. Circumscriptæ.

117. S. (Valsa) enteroleuca, Fr. S. M. ii. p. 381. Named by myself. I have seen no authentic specimens.

118. S. (Valsa) anomia, Fr. S. M. ii. p. 381; El. ii. p. 77. Named by Berkeley. It is, perhaps, a sphæropsoid state of *S. profusa*, Fr. A plant in the Hookerian Herbarium, marked by Klotzsch *S. anomia*, is *S. profusa*; and Tulasne considers the two identical. See Sel. Fung. Carp. vol. ii. p. 160.

119. S. (Valsa) extensa, Fr. The only specimens are named by Berkeley. I could find no fruit on reexamination; but my own specimens agree exactly in fruit with this.

120. S. (Valsa) detrusa, Fr.! S. M. ii. p. 382. From the Scleromycetes Sueciæ, no. 6. I think the endochrome is normally bipartite.

121. S. (Valsa) Prunastri, Pers.; Fr. S. M. ii. p. 380. Described from specimens named by Mougeot and Berkeley.

122. S. (Valsa) Carpini, Pers.; Fr. S. M. ii. p. 384. Named by Berkeley.

123. S. (Valsa) syngenesia, Fr. S. M. ii. p. 382. Named by Berkeley. It is marked "*S. Frangulæ*, Pers. in litt.," by Mougeot, which is identified with *S. syngenesia* by Fries in the 'Elenchus,' vol. ii. p. 78.

124. S. (Valsa) stellulata, Fr. Syst. Myc. ii. p. 380. From the Scleromycetes Sueciæ.

125. S. (Diplodia?) juglandina, Schwein.! Fr. S. M. ii. p. 385. This, by a misprint, is called *S. juglandicola* in my former paper.

Div. 10. Incusæ.

126. S. (Valsa) angulata, Fr. S. M. ii. p. 390. There has been great confusion about this plant and *S. taleola*. Fries has published different things under the name of *S. angulata*. There is a specimen in the Hookerian Herbarium from the Scleromycetes Sueciæ, named *S. angulata*, which has no asci, and elliptical dark-brown sporidia 0·0003 inch long. Tulasne, on the other hand, describes (Sel. Fung. Carp. vol. ii. p. 101) *S. angulata* as having fruit like *S. verrucæformis*. I am quite satisfied to abide by the opinion of Messrs. Berkeley and Broome and Tulasne, according to whom *this* plant is *S. taleola*, Fr., and no. 128 *post* is *S. leiphæmia*, Fr.

127. S. (Valsa) melasperma, Fr. ! S. M. ii. p. 389. From the Scleromycetes Sueciæ, no. 157.

128. S. (Valsa) taleola, Fr. S. M. ii. p. 390. See remarks under *S. angulata*, no. 126 *suprà*.

129. S. (Valsa) fulvo-pruinata, Berk. !

130. S. (Valsa) nivea, Hoffm. ; Fr. S. M. ii. p. 386. From the Scleromycetes Sueciæ, no. 76. Tulasne says (S. F. Carp. vol. ii. p. 183) that he has never seen polysporous asci. In the Kew specimens all the asci are so.

131. S. (Valsa) foraminula, Pers. ! in litt. to Mougeot.

132. S. (Valsa) profusa, Fr. ! S. M. ii. p. 392. From the Scleromycetes Sueciæ.

133. S. (Diplodia ?) rudis, Fr. ! El. ii. p. 98. Sent by Fries to Mougeot.

134. S. (Valsa) microstoma, Pers. ; Fr. S. M. ii. p. 388. From the Scleromycetes Sueciæ, no. 185.

135. S. (Valsa) dissepta, Fr. ! S. M. ii. p. 392. I originally described this from a specimen named by Dr. Montagne ; but I have since found fruit in Fries's own specimens in the Hookerian Herbarium, and the plant proves to be identical with my *S. stipata*.

136. S. (Valsa) circumscripta, Fr. ! Mont. Syll. p. 220, under "Valsa." From Dr. Montagne's herbarium.

137. S. (Valsa) Kunzei, Fr. S. M. ii. p. 388. Named by Berkeley.

138. S. (Valsa) concamerata, Curr. !

139. S. cincta, Curr. ! Fries (Adnotata) remarks, "Cfr. homonyma, S. M. ii. p. 387."

140. S. (Valsa) Sorbi, Schmidt, Fr. S. M. ii. p. 380. This plant is marked by Mougeot "*Sphæria acutangula*, Pers.," and by Klotzsch "*An Sphæria Sorbi*, Fr." Fries (Adnotata) remarks, "*Sph.* s. *Valsa Sorbi* sine dubio ad *Sph. circumscriptas* referenda."

141. S. (Valsa) sacculus, Schwein. ! Fr. S. M. ii. p. 378.

142. S. enteroxantha, Berk. ! Decades, no. 110.

143. S. (Valsa) Cratægi, Curr. ! The sporidia in this *Sphæria* are sometimes constricted in the centre.

144. S. (Valsa) dryina, Curr. !

Div. 11. Obvallatæ.

145. S. (Valsa) coronata, Hoffm. ; Fr. S. M. ii. p. 395. Tulasne says that the plant here figured hardly differs from *S. leiphæmia*, Fr. ; and I think he is right. (See his remarks as to this and as to *S. coronata*, Hoffm., in S. F. Carp. vol. ii. p. 191.)

146. S. (Valsa) leiphæmia, Fr. ! Syst. Myc. ii. p. 399. From the Scleromycetes Sueciæ, no. 78.

147. S. (Valsa) ambiens, Pers. Syn. p. 44 ; Fr. S. M. ii. p. 403. From the Scleromycetes Sueciæ, no. 8.

148. S. (Valsa) turgida, Pers.; Fr. S. M. ii. p. 400. From the Scleromycetes Sueciæ, no. 262, under the name of *S. faginea*, P. It is called *S. turgida* in the 'Summa Veg. Sc.' p. 412, no. 37.

149. S. (Valsa) stilbostoma, Fr. S. M. ii. p. 403. The specimen at Kew from the Scleromycetes Sueciæ has no fruit; but the figure I have given here is confirmed by Tulasne (Sel. F. Carp. vol. ii. 120). The fruit of the variety *Platanoides* (fig. 140*a*) is drawn from no. 186 of the Scleromycetes Sueciæ.

150. S. (Valsa) querna, Curr. !

151. S. (Valsa) biconica, Curr. !

152. S. (Valsa) pulchra, Curr. !

153. S. (Valsa) suffusa, Fr. ! S. M. ii. p. 399. From the Scleromycetes Sueciæ, no. 229.

154. S. (Valsa) Juglandis, Schwein. ! (non Fries).

155. S. (Valsa) Abietis, Fr. S. M. ii. p. 398. This plant is probably not distinct from *S. ambiens*, Pers. (See some remarks by Tulasne in 'Sel. Fung. Carp.,' vol. ii. p. 190.)

156. S. (Valsa) tetraspora, Curr. ! Tulasne (S. F. Carp. vol. ii. p. 176), does not consider the tetrasporous fructification sufficient to separate this from *Valsa ambiens*, Pers.

157. S. (Valsa) salicina, Pers.; Fr. S. M. ii. p. 401. The fruit here figured is not that of *S. salicina*, Pers., but of *S. salicella* Fr., as I have ascertained from authentic specimens. There is an authentic specimen of *S. salicina*, Pers., in the Hookerian herbarium, but it is only in a cytisporoid state. *S. salicina*, Fr., has fruit like that of *Valsa ambiens*, Fr., from which it is probably not distinct.

158. S. (Valsa) intexta, Curr. !

Div. 12. Circinatæ.

159. S. (Valsa) pulchella, Pers.; Fr. S. M. ii. p. 406. I made a mistake here. Figs. 150–152 belong to some other species, probably to *S. Wahlenbergii*, Desm. The specimen of *Valsa pulchella* in the Hookerian herbarium is from the Scleromycetes Sueciæ, no. 146. The fruit is not quite perfect, but is clearly the same plant as one in my own herbarium, of which fig. 153 represents the fruit. (See Tulasne's remarks in Sel. F. Carp. vol. ii. pp. 109, 120.)

160. S. (Valsa) furfuracea, Fr. S. M. ii. p. 409. Named by myself, but I have some doubt about the species. I have seen no authentic specimens.

161. S. (Valsa) convergens, Tode; Fr. S. M. ii. p. 410. Named by Berkeley.

162. S. (Valsa) hypodermia, Fr. ! S. M. ii. p. 407. From the Scleromycetes Sueciæ, no. 32.

163. S. (Valsa) thelebola, Fr. ! S. M. ii. p. 408. Figs. 157 and 159 from the Scleromycetes Sueciæ, no. 384. Possibly fig. 158 is a different species, as suggested by Tulasne.

164. S. (Valsa) xanthostroma (or chrysostroma), Fr. ! Summ. Veg. Sc. p. 412, no. 32; Montagne Syll. p. 221. From the Scleromycetes Sueciæ, no. 444. The other specimen here referred to is from Dr. Montagne's herbarium.

165. S. (Valsa) vestita, Fr. ! S. M. ii. p. 410. From the Scleromycetes Sueciæ, no. 230.

166. S. (Diplodia ?) Meliæ, Schwein. ! Fr. El. ii. p. 85.

167. S. (Valsa), ? sp. (See observations under no. 39 *suprà*.)

168. S. (Valsa) quaternata, Pers. Syn. p. 45, Fr. S. M. ii. p. 409. From the Scleromycetes Sueciæ, no. 9.

169. S. (Valsa) Innesii, Curr. !

170. S. (Valsa) arcuata, Curr. ! I think this is the same species as no. 91 *suprà*. (See the remarks there made.)

171. S. (Valsa) faginea, Curr. !

Div. 13. Cæspitosæ.

172. Sphæria cupularis, Pers.; Fr. S. M. ii. p. 416. I cannot say whether the fruit here figured is really that of *S. cupularis*, Pers. There are specimens in the Herbarium marked as this species both by Mougeot and Berkeley; but they differ from one another, and moreover each specimen contains two different species.

173. S. Pseudobombarda, Mont. ! Sylloge, p. 228.

174. S. (Nectria) examinans, Berk. !

175. S. (Nectria) coccinea, Pers.; Fr. S. M. ii. p. 412. I am uncertain whether this is the true *S. coccinea*, Pers. This plant and the variety "*sanguinella*" are named by Mr. Berkeley. There is a specimen in the Herbarium from the Scleromycetes Sueciæ (no. 183) in which the asci are stuffed with myriads of minute sporidia about 0·00012 inch long.

176. S. (Nectria) cinnabarina, Tode; Berk. Engl. Flora, no. 77, under "Sphæria." Figured from a fresh specimen. The species is too well known to admit of any doubt.

177. S. (Nectria) decolorans, Pers. Syn. p. 49. From the Scleromycetes Sueciæ, no. 184. I think Fries is right in uniting it with *S. cinnabarina*, Tode. He remarks (Adnotata), "*Sph.* s. *Nectria decolorans* est status senilis *Sph. cinnabarinæ*, Tode."

178. S. Berberidis, Pers.; Fr. S. M. ii. p. 415. From the Scleromycetes Sueciæ, no. 35.

179. S. (Nectria) cucurbitula, Tode; Fr. S. M. ii. p. 415. I cannot say whether this is the true *N. cucurbitula*, Tode. There is no authentic specimen of that species in the Herbarium. There are specimens named by Klotzsch and Berkeley, and from the Scleromycetes Sueciæ, no. 263, but they do not agree in fructification.

180. S. Laburni, Pers. Syn. p. 50; Fr. S. M. ii. p. 413. From the Scleromycetes Sueciæ, no. 34.

181. S. pulicaris, Fr. S. M. ii. p. 417. From the Scleromycetes Sueciæ.

182. S. (Nectria) Purtoni, Grev.! Fries remarks (Adnotata), "*Sph.* s. *Nectria Purtoni*=*Sphæria episphæria* in *Valsa Abietis* parasitans e specc. a cel. Greville missis. Cfr. El. ii. p. 79."

183. S. (Nectria) acervalis, Moug.! Fr. El. ii. p. 83.

184. S. (Nectria) Aquifolii, Fr.! El. ii. p. 82. Sent by Fries to Mougeot.

185. S. Sphæria acervata, Fr. S. M. ii. p. 416. I presume this was described from some specimen lent to me; for I cannot find the plant in the Hookerian herbarium, nor do I possess any specimens of it.

186. Sphæria conglobata, Fr. The specimens are named by Klotzsch and Sir W. Hooker, but I am satisfied they are all forms of *S. pulvis-pyrius*. Klotzsch and Sir W. Hooker appear to have been mistaken; for Fries remarks (Adnotata), "*Sph. conglobata* vera, meo sensu, species distincta."

187. S. Buxi, Curr.! Milton, Northamptonshire, *Berkeley*.

Div. 14. Confluentes.

188. Sphæria scoriadea, Fr.! El. ii. p. 87. From the Scleromycetes Sueciæ, no 344.

189. Sphæria rhizogena, Berk.!

190. Sphæria Spartii, Nees; Fr. S. M. ii. p. 424. From the Scleromycetes Sueciæ, no. 234. This seems to be the same as *S. elongata*, Fr.!, Scleromycetes Sueciæ, no. 33, although the sporidia of this latter plant are rather shorter, not so acuminate, and not constricted. Fries remarks (Adnotata), "*Sph. Spartii* nexus cum *S. elongata* (speciei forma primaria) manifestus sed ostiolo aliisque notis secedit. Ad genus *Cucurbitaria* Not. pertinent *Sph. Laburni*, *Berberidis*, *elongata*, '*varia*,' *Spartii*."

191. Sphæria? Dothidea, Fr. (? Mont.) S. M. ii. p. 423. Figured from plants named by Sir Wm. Hooker and Klotzsch. There are authentic specimens from the Scleromycetes Sueciæ agreeing externally with those named by Sir Wm. Hooker and Klotzsch, but exhibiting no fruit.

192. Sphæria mutila, Fr.! S. M. ii. p. 424. From the Scleromycetes Sueciæ, no. 164. Fries (Adnotata) remarks, "Sporas semper uniseptatas vidimus."

193. Sphæria megalospora, Mont.! Sylloge, p. 229.

194. Sphæria insidens, Schwein.!

195. Sphæria melogramma, Pers.; Fr. S. M. ii. p. 420. From the Scleromycetes Sueciæ, no. 441, and specimens named by Mougeot. Fries (Adnotata) remarks, "*Sph. melogramma*=*Melogramma campylosporum*, S. V. Sc. Vidimus aliam formam stylosporam."

196. Sphæria Calycanthi, Schwein.! Fries, S. M. ii. p. 441.

197. S. (Diatrype) decipiens, Dec.; Fr. S. M. ii. p. 371. Figured from specimens named by Mr. Berkeley.

198. S. (Diplodia) subsolitaria, Schwein. ! F. El. ii. p. 86.

198 *a*. Sphæria chrysentera, Curr. !

Div. 15. Seriatæ.

199. S. Junci, Fr. There are several specimens in the Herbarium from the Scleromycetes Sueciæ, others named by Sir W. Hooker, and others by Mr. Berkeley, but all in a very bad condition; I am uncertain from which this figure was drawn.

200. Sphæria arundinacea, Sow. Named by Berkeley.

201. Sphæria nebulosa, Pers.; Fr. S. M. ii. p. 450. Named by Berkeley, but agreeing with barren specimens from the Scleromycetes Sueciæ, no. 197. The sporidia in the ascus (fig. 201) are perhaps a little too much curved.

202. Sphæria Godini, Desm. Named by Berkeley.

203. Sphæria clara, Curr. !

204. S. pardalota, Mont. ! The specimens of this are imperfect. It is not the plant described in the Sylloge, although it may be an imperfect state of it. On reexamination, I found the stylospores smaller than the measurement here given.

205. Sphæria ? pantherina, Berk. !

206. Sphæria longissima, Pers. The specimens of this species are from the Scleromycetes Sueciæ, no. 184, and from Dr. Montagne's herbarium, but they are imperfect.

Div. 16. Confertæ.

207. Sphæria bifrons, Schm. and Kunze; Fr. S. M. ii. p. 438. Named by Mougeot.

207 *a*. Sphæria Graminis, Pers.; Fr. S. M. ii. p. 434. Described from a fresh specimen named by myself. It is difficult to say what is the true *S. Graminis*, Pers. Fries's specimens in the Hookerian herbarium (Scler. Suec. no. 284) differ from this, which agrees, however, with specimens from Decandolle's Fl. Fr., no 779.

208. S. (Diplodia ?) Malorum, Berk. ! Engl. Flora, vol. v. "Fungi," p. 257.

209. S. gigantea, Mont. Syll. 230 !

210. S. (Hendersonia ?) Yuccæ-gloriosæ, Schwein. ! Fr. S. M. ii. p. 437.

211. Sphæria rhytismoides, Bab. in Proc. Linn. Soc. vol. i. p. 32. Named by Mr. Bloxam.

212. S. (Diatrype) insularis, Berk. MS. !

213. Sphæria fimbriata, Pers. Syn. p. 36; Fr. S. M. ii. p. 436. Upon reexamination, I found ripe specimens. Figure 212 is quite right. The sporidia are uniseriate or biseriate, colourless, sometimes curved, sometimes elliptico-acuminate, sometimes with a nucleus at each end, 0·0004 inch long.

214. S. ceuthocarpa, Fr. S. M. ii. p. 439. Named by Mr. Broome. Fries (Adnotata) remarks, "Sporæ ex icone auctoris quam maxime a genuinis *Sphæriis* recedunt, nec tales videre unquam mihi contigit. Ex icone omnino peculiare genus = *Ceuthocarpa*."

B. SIMPLE SPHÆRIÆ.

Div. 17. Byssisedæ.

215. S. glis, Berk. and Curr. !

216. S. Desmazieri, Berk. and Br. ! Ann. and Mag. Nat. Hist. 2 ser. vol. ix. p. 318, pl. 9. fig. 1.

217. S. (Nectria) rosella, A. and Schw.; Fr. S. M. ii. p. 441. Marked by Greville "*Sphæria rosella*, Carm.;" by Klotzsch ! "A. and Sz."

218. S. aquila, Fr. S. M. ii. p. 442. Named by Berkeley. There are no authentic specimens, but there is no doubt about the species.

219. S. truncata, Schw. ! Fr. S. M. ii. p. 442. This specimen has no fruit. I think it is certainly not distinct from *S. aquila*, Fr., although the perithecia are mostly truncate, having a flattened area round the ostiolum.

220. S. fulva, Fr. El. ii. p. 90. Named by Berkeley. Fries (Adnotata) remarks, "*Sph. fulva*=*Nectria fulva*, Fr. S. V. Sc. p. 387. Vellem attenderent auctores species *l. c.* in nota citatas non minus quam in textu allatas *Nectrias* a me esse dictas, quibus addendæ *N. agnina*, *erubescens* (Rob.), aliæque."

221. S. (Nectria) aurantia, Pers.; Fr. S. M. ii. p. 440. Marked by Greville "*Sphæria aurantia*, Carm.;" by Klotzsch "Pers. !" It is on *Polyporus versicolor*, Fr.

222. S. thelena, Fr. S. M. ii. p. 441. Marked "*S. aquila*" by Klotzsch, and *S. thelena* by Berkeley. One mark of distinction between *S. aquila* and *S. thelena* is, that the subiculum in *S. aquila* is persistent, in *S. thelena* evanescent. Fries (Adnotata) remarks under *S. thelena*, "Hæc, sensu Todeano, ad Villiferas, *S. aquila* ad Pulverulentas ejusd.; illa enim villum floccosum, album, hæc pulverem atrum eructat. Perithecia *S. thelenæ* tenuia, fragilia, *S. aquilæ* rigida, bicorticata, firam. Hinc valde diversa censeo."

223. S. lanata, Fr. S. M. ii. p. 442. Named by Berkeley, but marked "*S. ossea*, Carm.," by Sir Wm. Hooker. The collapsed appearance of the perithecia arises from the bark covering the lower part of them. Fries (Adnotata) remarks, "A reliquis diversissima nec ad Byssisedas referenda. Semper sub cortice latet. In villo expanso primo observantur guttulæ fluxiles, limpidæ, absque perithecio (analogæ cum Myxotricho), quo tenerrimo dein obducuntur, siccitate arcte collabente. Ascos non vidi; modo sporas subtiles, fusiformes, pellucidas."

224. S. subiculata, Schwein. !

225. S. alligata, Fr. ! S. M. ii. p. 445. From the Scleromycetes Sueciæ, no. 342.

226. S. tristis, Tode; Fr. S. M. ii. p. 444. From the Scleromycetes Sueciæ. The sporidia are mostly rather rounded at the ends than acuminate.

227. S. phæostroma, Mont. Fl. Alg. t. xxvi. fig. 2. Described from fresh British specimens. There can be no doubt about the species.

Div. 18. Villosæ.

228. S. scabra, Curr. !

229. S. canescens, Pers.; Fr. S. M. ii. p. 448. Specimens named by Sir Wm. Hooker, Klotzsch, and Berkeley; all agree.

230. S. Racodium, Pers.; Fr. S. M. ii. p. 449. Named by Berkeley. There is a specimen from the Scleromycetes Sueciæ, but it has no fruit.

231. S. ovina, Pers.; Fr. S. M. ii. p. 446. Named by Berkeley.

232. S. cæsia, Carm. ! Named by Klotzsch, who, I suppose, received it in MS. from Carmichael. From a note on the specimen, Klotzsch seems to have considered it a young state of *S. ovina*; but the fructification is totally different. Mr. Berkeley has written "an vera *Sph.*?" He had probably not examined the fruit.

233. S. hirsuta, Fr. S. M. ii. p. 449. Named by Klotzsch.

234. S. rhodochlora, Mont. ! Syll. p. 227.

235. S. mutabilis, Schwein. !

236. S. pilosa, Pers.; Fr. S. M. ii. p. 440. There are four specimens, all named by Klotzsch. Three of them are as here described. The fourth has perithecia more densely hairy, but not otherwise externally distinguishable. In this latter the sporidia are very dark-brown, varying from reniform to globular (mostly the latter). The *diameter* of the globular sporidia is 0·0004 to 0·0005 inch, which is the same as the *length* of the reniform sporidia.

237. S. (Ceratostoma) chionea. Fr. ! S. M. ii. p. 446, El. vi. p. 92. From the Scleromycetes Sueciæ. Fries remarks (Adnotata), "In statu ascigero pulcherrima, sporis nigris in asco pellucido biserialibus."

238. S. strigosa, A. and S.; Fr. S. M. ii. p. 448. Specimens named by Klotzsch and Mougeot. There is an authentic specimen from Schweinitz which seems to be the same thing, but it is in very bad condition.

239. S. Brassicæ, Kl. ! Eng. Fl. p. 261. Fries (Adnotata) remarks, "Synonymon antiquius est *S. olerum*, Fr. El. p. 99. *Sph. Brassicæ* P. aliena est."

240. S. pulvinulus, Berk. !

241. S. superficialis, Curr. !

242. S. capillifera, Curr. !

Div. 19. Denudatæ.

243. S. inspersa, Berk. !

244. S. rhodomphalos, Berk. ! Fries (Adnotata) remarks, "Hujus synonymon est *S. rhodopis*, Fr. S. V. Sc. p. 389."

245. S. Bombarda, Batsch; Fr. S. M. ii. p. 456. Specimens named by Berkeley and Montagne. There is another from the Scleromycetes Sueciæ, no. 266, but shrivelled, and without fruit.

246. S. moriformis, Tode; Fr. S. M. ii. p. 458, El. ii. p. 94. From the Scleromy-

cetes Sueciæ. The asci are not always so broad as in fig. 30. The length of the sporidia is 0·0014 inch.

247. S. PUSTULA, Curr. !

248. S. PULVIS-PYRIUS, Pers.; Fr. S. M. ii. p. 458. From the Scleromycetes Sueciæ, no. 120. The specimen is marked as a variety, but I do not see in what it differs from the typical form.

249. S. CONGLOBATA, Fr. S. M. ii. p. 414. There are several specimens, all named by Klotzsch. *S. Aceris*, Pers. in litt. to Mougeot, is the same thing.

250. S. DIOICA, Fr. ! Marked by Mougeot, who received it in a letter from Fries.

251. S. MOROIDES, Curr. !

252. S. PLATEATA, Pers. ! in litt. to Mougeot. Fries (Adnotata) remarks, "*Sph. plateata* Pers. in litt. est *Sph. obducens* Fr. S. M. et Exs. *Sph. obducens* Schum. ! est forma *Sph. spermoidis*."

253. S. SPERMOIDES, Hoffm.; Fr. S. M. ii. p. 457. From the Scleromycetes Sueciæ, no. 237.

254. S. MAMMÆFORMIS, Pers.; Fr. S. M. ii. p. 455. Named by Greville and Klotzsch.

255. S. STERCORARIA, Sow.; Fr. S. M. ii. p. 455. Named by Berkeley.

256. S. STERCORARIA, Sow. var. ? !

257. S. STERCORARIA, Fr. ! S. M. ii. p. 455. Sent by Fries to Mougeot.

258. S. BIFORMIS, Schwein. ! non Fries.

259. S. VERRUCOSA, Grev. ! Fr. Index Alphabeticus; = *S. moriformis*, Tode. The sporidia have more than one septum, but this is probably the case with *S. moriformis*.

260. S. PULVERACEA, Ehrh.; Fr. S. M. ii. p. 459. Sent by Persoon to Mougeot. I could find no asci on reexamination. Rabenhorst's ('Fungi Europæi') no. 338 quite agrees with my description; but the sporidia reach 0·0005 inch, or nearly so.

261. S. SORDARIA, Fr. ! S. M. ii. p. 458, El. ii. p. 94. From the Scleromycetes Sueciæ, no. 270.

262. S. OBDUCENS, Schum. (= *S. plateata*, Pers. *suprà*). From the Scleromycetes Sueciæ, no. 119. *S. obducens minor*, Fr. Syst. Myc. ii. p. 456: see the remarks under No. 252 *suprà*.

263. S. POMIFORMIS, Pers. From the Scleromycetes Sueciæ, no. 236. Tulasne (Sel. Fung. Carp. vol. ii. p. 246) is mistaken in supposing that I considered there was no distinction between this species and *S. pulvis-pyrius*, Pers. All I meant to say was, that the specimens marked "*pomiformis*" in the Hookerian herbarium are identical with *S. pulvis-pyrius*. Tulasne (*l. c.*) describes the sporidia of *S. pomiformis* as white, shortly ovate, and bipartite; and Fries (Adnotata) observes, "a *Sph. pulv. pyrio* vera nimis distat peritheciis primitus mollibus, regulariter collabentibus ostiolo mammæformi eumorpho."

264. S. (NECTRIA) PEZIZA, Tode; Fr. S. M. ii. p. 452. Named by Berkeley.

265. S. (Nectria) sanguinea, Fr.! From the Scleromycetes Sueciæ, no. 264.

266. S. (Nectria) Episphæria, Tode; Fr. S. M. ii. p. 454, El. ii. p. 94. Named by Berkeley. This is a well-known species.

267. S. rubicola, Curr.!

268. S. (Gibbera) Vaccinii, Sow. t. 373. fig. 1; Eng. Flora, vol. v. pt. 2. p. 254. There are specimens from the Scleromycetes Sueciæ, no. 51, and others named by Mougeot. I do not recollect which specimen the fruit is drawn from, as I could find none on reexamination. The two are clearly the same thing.

269. S. caudata, Curr.!

270. S. collabens, Curr.!

271. S. Curreyii, Blox. MS.!

272. S. pulviscula, Curr.!

Div. 20. Pertusæ.

273. S. pertusa, Pers.; Fr. S. M. ii. p. 464. Specimens named by Klotzsch and Sir Wm. Hooker.

274. S. picastra, Fr.! S. M. ii. p. 463.

275. S. (Diplodia) lecythea, Schwein.! Fr. S. M. ii. 460.

276. S. merdaria, Fr.! El. ii. p. 100. Sent by Fries to Mougeot.

277. S. Olearum, Cast. From Desmazière's herbarium, Pl. Cr. de Fr. no. 1767.

278. S. ulmicola, Curr.!

279. S. micraspis, Berk.!

280. S. putaminum, Schwein.!; Fr. S. M. ii. p. 461.

281. S. callicarpa, Curr.!

Div. 21. Platystomæ.

282. S. barbara, Fr. S. M. ii. p. 468. Specimens named by Montagne and Berkeley.

283. S. macrostoma, Tode; Fr. S. M. ii. p. 469. From the Scleromycetes Sueciæ, no. 345. It is *S. media*, Pers., of which there is an authentic specimen. *S. diminuens*, Pers., of which there is a specimen from the Scleromycetes Sueciæ, no. 447, seems to be the same thing.

284. S. ligniaria, Grev. Sc. Cr. Fl. t. 82. Named by Sir Wm. Hooker. Probably received by him from Dr. Greville. Fries observes (Adnotata), "*Sph. ligniaria* Grev.! ex meis specc. non ad Lophiostomas pertinet."

285. S. cristata, Pers.,=*S. crenata*, Fr. S. M. ii. p. 469. Named by Mougeot.

Div. 22. Ceratostomæ.

286. S. brevirostris, Fr.! S. M. ii. p. 474. From the Scleromycetes Sueciæ, no. 790.

287. S. longispora, Curr.! The name *S. rostellata* is in Klotzsch's handwriting.

288. S. (Cytispora), micula Fr.! El. ii. p. 101. Sent by Fries to Mougeot.

289. S. (Sphæropsis ?) pilifera, Fr.! S. M. ii. p. 472. From the Scleromycetes Sueciæ, no. 25.

290. S. cirrhosa, Fr. Both plants mentioned under this number are named by Klotzsch. I find the perithecia of the latter tomentose, and the sporidia colourless, on re-examination. An authentic specimen from the Scleromycetes Sueciæ is quite decayed.

291. S. rostrata, Fr. S. M. ii. p. 473. Named by Klotzsch, with a ?. It is marked *Sphæria parabolica* by (I think) Carmichael.

Div. 23. Obtectæ.

292. S. eutypa, Fr. S. M. ii. p. 478. Named by Berkeley. A specimen from the Scleromycetes Sueciæ, no. 15 (obviously the same species), has no fruit.

293. S. vibratilis, Fr. S. M. ii. p. 482. See the observations in my former paper.

294. S. operculata, A. and S.; Fr. S. M. ii. p. 479. From the Scleromycetes Sueciæ, no. 268. Fries (Adnotata) remarks, "Præter statum hujus aliarumque ascigerum alium legi nucleo omnino *Sph. acutæ*! Prorsus similem in *Diatrype disciformi* quoque vidimus. Lætamur cel. auctorem etiam *Sph. acutam* genere haud movendam censere."

295. S. (Halonia) cubicularis, Fr. S. M. ii. p. 477, El. ii. p. 97. Named by Montagne.

296. S. livida, Fr. S. M. ii. p. 479. From the Scleromycetes Sueciæ, no. 516.

297. S. (Sphæropsis) pruinosa, Fr. S. M. ii. p. 486. There are two specimens—one from the Scleromycetes Sueciæ, without fruit, the other named by Mougeot.

298. S. (Sphæropsis ?) Oleæ, DC.; Fr. S. M. ii. p. 489. Named by Persoon.

299. S. (Hercospora) rhodostoma, A. & S.; Fr. S. M. ii. p. 485. From the Scleromycetes Sueciæ, no. 83.

300. S. Cerasarum, Fr.!

301. S. Tamarisci, Grev.! (not "Tamariscinis" as in the text).

302. S. Pinastri, Dec.; Fr. S. M. ii. p. 488. From the Scleromycetes Sueciæ, no. 190.

303. S. clypeata, Nees; Fr. S. M. ii. p. 487. Named by Klotzsch. It is doubtful whether or not *S. clypeata* is a state of *S. mamillana*, Fr. I suspect it is; for I see something like septa in the sporidia; and if the sporidia of *S. clypeata* were septate, it could hardly be separated from *S. mamillana*. Fries evidently doubts their distinctness: see 'Syst. Myc.' ii. p. 487.

304. S. Xylostei, Pers.; Fr. S. M. ii. p. 487, El. ii. p. 99. From the Scleromycetes Sueciæ, no. 189. I think the sporidia lose their border in age.

305. S. (Hendersonia) mamillana, Fr. S. M. ii. p. 487. From the Scleromycetes Sueciæ, no. 397, marked "*minor*." In a specimen of *S. mamillana*, Fr. (Desm. Fl. Cr. de France, edit. i. 1279), given me by M. Desmazières, I find long slender asci, containing narrowly oblong, slightly curved, 3-septate, brown sporidia, 0·0007 to

0·0009 inch long, uni- or bi-seriate, mostly the former. This is, no doubt, the perfect state of the species, the Kew specimen being only imperfectly developed.

306. S. (HENDERSONIA) HIRTA, Fr.! S. M. ii. p. 483. From the Scleromycetes Sueciæ, no. 17.

307. S. SEMIIMMERSA, Grev.!

308. S. OCELLATA, Fr.! S. M. ii. p. 480. From the Scleromycetes Sueciæ, no. 187.

309. S. TOMICUM, Lev. Ann. des Sc. Nat. 1848. From Desmazière's Fl. Cr. de France, no. 1776!

310. S. CONFORMIS, Berk. & Br.! Ann. and Mag. Nat. Hist. ser. 2. vol. ix. p. 325, pl. xi. fig. 19.

311. S. (HALONIA) DITOPA, Fr. S. M. ii. 381. Drawn from a specimen given to me by Mr. Broome. The one in the Hookerian herbarium, from the Scleromycetes Sueciæ, no. 84, has no fruit. Tulasne (S. F. Carp. ii. p. 145) makes *S. ditopa* a myriasporous form of *S. suffusa*, Fr. I cannot understand this, for no two things could be more unlike one another in fructification.

312. S. QUADRINUCLEATA, Curr.!

313. S. RUBI, Curr.!

314. S. INQUILINA, Wallr.; Fr. El. ii. p. 100. Named from specimens taken from my own herbarium. This species ought perhaps to be with the Caulicolæ rather than the Obtectæ. Fries (Adnotata) remarks, "*Sph. inquilina* Fr., nec Wallr., qui hanc innominatam misit. Equidem semper sincere citavi primos specierum determinatores."

315. S. ACUS, Blox. MS.!

316. S. PHOMATOSPORA, Berk. & Br.! Ann. & Mag. Nat. Hist. ser. 2. vol. ix. p. 380, pl. xi. fig. 33.

317. S. ARGUS, Berk. & Br.! Ann. & Mag. Nat. Hist. ser. 2. vol. ix. p. 322, pl. x. fig. 9.

318. S. APICULATA, Curr!

319. S. APPENDICULOSA, Berk. & Br.! Ann. & Mag. Nat. Hist., ser. 2. vol. vii. p. 189.

320. S. SIPARIA, Berk. & Br.! Ann. & Mag. Nat. Hist. ser. 2. vol. ix. p. 321, pl. ix. fig. 8.

321. S. (MASSARIA) AMBLYOSPORA, Berk. & Br.! *l. c.* p. 322, pl. x. fig. 10.

322. S. GIGASPORA, Desm.!

323. S. INQUINANS, Tode; Fr. S. M. ii. p. 486. Figured from specimens in my herbarium collected near Blackheath in March 1856. There is much confusion about *S. inquinans*, Tode. The only specimen in the Kew herbarium is from the Scleromycetes Sueciæ, no. 394, and is certainly the same thing as *S. amblyospora*, B. & Br. Tulasn (in the S. F. Carp. vol. ii. p. 236, under *Massaria Bulliardi*) makes *S. inquinans*, Tode, identical with *S. gigaspora*, Desm.; but at p. 134 of the same volume he identifies it with a plant described by me in the 'Microscopical Journal' (vol. iv. 1856, p. 198), which is certainly not *S. gigaspora*.

324. S. BUFONIA, Berk. & Br.!

325. S. FUSCELLA, Berk. & Br.!

326. S. TILIÆ, Pers. Syn. p. 84; Fr. S. M. ii. p. 485. Tulasne (S. F. Carp. vol. ii. p. 231) makes a new species of this, under the name of *Massaria Curreii*, and says that my figs. 105 & 106 are the true *S. Tiliæ*, Pers. All the specimens of *S. Tiliæ* at Kew (named by Purton, Fries, and Mougeot) are without fruit. Fries remarks (Adnotata), "Structura a me observata plane recedit. Videtur duplex, jam a Persoonio distincta, sub hoc nomine vagare."

327. S. ASHWELLIANA, Curr.!

Div. 24. OBTURATÆ.

328. S. MILLEPUNCTATA, Grev.!

329. S. FRAXINI, Fr. Named by Klotzsch. Fries (Adnotata) remarks, "Mea species per corticem erumpenti-libera cum *Sph. corticola* jungi nequit. Fingo hanc statum primarium stylosporum *Tympan. Fraxini*."

330. S. CORTICIS, Sow. t. 372. f. 5; Fr. S. M. ii. 481, El. ii. 98. From the Scleromycetes Sueciæ, no. 391. The septate sporidia here referred to occurred in a specimen in my herbarium collected at Eltham in October 1856.

331. S. TRANSVERSALIS, Schw! Fr. El. ii. 94.

332. S. JUGLANDIS, Fr. S. M. ii. 493. Named by Berkeley; but I could only find stylospores on reexamination. Fries (Adnotata) remarks upon this and no. 333, "Hæ duæ formæ promiscuæ nascuntur et pro diversis ejusdem speciei formis habentur."

333. S. JUGLANDIS, Fr.! S. M. ii. 493. See remarks under no. 332.

334. S. INSPERSA, Schwein.!

335. S. (SPHÆROPSIS) UBERIFORMIS, Fr.! S. M. ii. p. 491. Fries remarks (Adnotata), "*Sph. uberiformis* = *Topospora uberiformis* Summ. Veg. Sc."

336. S. (HENDERSONIA) OPPILATA, Fr.! S. M. ii. p. 493. Fries (Adnotata) remarks, "In statu typico ascigera!"

337. S. (HENDERSONIA) PALINA, Fr. S. M. ii. p. 494. Named by Mougeot.

338. S. (HENDERSONIA) STROBILINA, Holl. and Schm. There are several specimens in the Hookerian herbarium, but none authentic. The figure here given agrees with an authentic specimen in my own herbarium. There are no asci.

339. S. LONICERÆ, Fr. S. M. ii. p. 492. Named by Mougeot. A specimen from the Scleromycetes Sueciæ (no. 349) has no fruit.

340. S. PISIFORMIS. Sent by Persoon in a letter to Mougeot. Fries (Adnotata) remarks, *Sph. pisiformis P.* = *Cytispora pisiformis* Duby Syn. Gall., S. V. Sc."

341. S. (SPHÆROPSIS) OBTURATA (not "obtusata," as in text), Fr.! S. M. ii. p. 495. From the Scleromycetes Sueciæ, no. 128.

342. S. (HENDERSONIA) SYRINGÆ, Fr.! S. M. ii. p. 492. From the Scleromycetes Sueciæ, no. 233.

Div. 25. Subtectæ.

343. S. (Diplodia) Ilicis, Fr. S. M. ii. p. 501. Named by Berkeley. I could find no fruit on reexamination.

344. S. (Diplodia) sarmentorum, Fr. ! S. M. ii. p. 498. From the Scleromycetes Sueciæ, no. 18.

345. S. (Sphæropsis) atrovirens β. *Buxi*, Fr. Named by Klotzsch.

346. S. epidermidis, Fr. S. M. ii. p. 499. Named by Berkeley.

347. S. Rusci, Wallr. Named from specimens in my own herbarium.

348. S. seriata, Curr. !

Div. 26. Caulicolæ.

349. S. doliolum, Pers.; Fr. S. M. ii. p. 509. In an authentic specimen of Persoon's the sporidia are 3-septate, *slightly* constricted at the septa, varying from 0·0008 to 0·001 inch in length. Fig. 122 is hardly correct. The two right-hand sporidia of fig. 137 are exactly like those of Persoon's plant. Perhaps *S. Helenæ* is a form of *S. doliolum*. The second joint of the sporidia in the latter is sometimes swollen.

350. S. Dematium, Pers. Fr. S. M. ii. p. 505. Described from a specimen from the Scleromycetes Sueciæ. Persoon's specimens are quite imperfect.

351. S. Arundinis, Fr. S. M. ii. p. 510. Named by Mougeot.

352. S. (Sphæropsis ?) Corni suecicæ, Fr. ! From the Scleromycetes Sueciæ, no. 409.

353. S. (Sphæropsis ?) acuta, Hoffm. From the Scleromycetes Sueciæ, no. 118.

354. S. complanata, Tode. There are numerous specimens. None authentic.

355. S. coniformis, Fr. S. M. ii. p. 508. Named by Berkeley.

356. S. imberbis, Fries ! Scleromycetes Sueciæ, no. 403. Fries remarks (Adnotata), "Fons Scler. Suec. Exs. 403 bis. Forma tertia Auctoris est *Cryptosporium imberbe*, S. V. Sc. p. 423; perithecium enim spurium ab epidermide nigrifacta ortum."

357. S. phæosticta, Berk. !

358. S. (Hendersonia) Zeæ, Schwein.; Fr. S. M. ii. p. 527. The first plant here described is named by Mr. Berkeley, but is quite different from the other, which I now find to have been named by Schweinitz himself. On reexamination of the latter, I have found asci and sporidia, besides the fruit of *Hendersonia arcus*, Berk. & Br.; and I am quite convinced that *S. Zeæ*, Schwein., is nothing more than *Sph. pulicaris*, Fr., and that *Hendersonia arcus*, Berk. & Br., is a stylosporous state of the latter Sphæria.

359. S. pellita, Fr. S. M. ii. p. 503. Named by Klotzsch. The perithecia are hairy, and the sporidia sometimes exceed 0·0016 inch.

360. S. nigrella, Fr. ! S. M. ii. p. 512. Named by Berkeley.

361. S. Pisi, Sow. Named by Berkeley.

362. S. Astragali, Curr.! Fries remarks (Adnotata), "*Sph. Astragali* ob locum conferatur cum *S. melæna*, S. V. Sc."

363. S. acuminata, Sow.; Fr. S. M. ii. p. 506. Named by Berkeley.

364. S. caricina, Desm.!

365. S. (Diplodia) calvescens, Fr.! From the Scleromycetes Sueciæ, no. 401.

366. S. Clivensis, Berk. & Br.! Ann. and Mag. Nat. Hist. ser. 2. vol. ix. p. 379, pl. xi. fig. 29.

367. S. rubella, Pers.; Fr. S. M. ii. p. 506. From the Scleromycetes Sueciæ. I suspect the length of the asci is more variable than the measurement here given would imply.

368. S. Helenæ, Curr.!

369. S. herbarum, Pers.; Fr. S. M. ii. p. 511. The specimens of this are (as might be expected) very numerous. Persoon's specimen has no fruit; but the species is too common to admit of any doubt. There is a plant marked by Persoon *S. herbarum* β. *tecta*, which is something quite different. It has long, linear, multiseptate sporidia, as long as, and quite filling, the ascus. I never saw the species before. It is quite different from *S. acuminata*, Sow.

Div. 27. Foliicolæ.

370. S. rhizomorphæ, Kunze. Named by Klotzsch.

371. S. tubæformis, Tode; Fr. S. M. ii. p. 516. From the Scleromycetes Sueciæ, no. 26.

372. S. (Sphæropsis?) maculæformis, Pers.; Fr. S. M. ii. p. 524. Named by Berkeley.

373. S. (Sphæropsis?) oleæ, D. C.; Fr. S. M. ii. p. 489. Named by Dr. Montagne.

374. S. (Sphæropsis?) leptidea, Fr.! S. M. ii. p. 522. From the Scleromycetes Sueciæ, no. 13.

375. S. (Sphæropsis?) duplex var. *Nardi*, Fr. S. M. ii. p. 520. There are specimens named by Mougeot and by Fries (Scleromycetes Sueciæ, no. 85), but I could find no fruit in either on reexamination.

376. S.? punctiformis, Pers. From the Scleromycetes Sueciæ.

377. S. (Sphæropsis) Hederæ, Sow.; Fr. S. M. ii. p. 521. Named by Klotzsch.

378. S. (Sphæropsis) Ægopodii, Pers.; Fr. S. M. ii. p. 526. For the description here given I wish to substitute the following, taken from an authentic specimen named by Persoon:—Apparently no perithecia; stylospores long, narrow, and fusiform, having normally a septum, or division of the endochrome, in the middle, but which is not always visible. Length of stylospores 0·004 inch. Pseudoperithecium formed of the tissue of the leaf.

379. S. (Discosia) Artocreas, Tode; Fr. S.M. ii. p. 523. From the Scleromycetes Sueciæ, no. 151. Fries (Adnotata) remarks, "Quam maximi momenti observatio, *Dis-*

cosias in statu typico esse ascigeras! Sic successive omnia Pyrenomycetum genera absque ascis ad ascigeros migrant vel, ut *Sphæropsides*, status spermogoniis instructi censendi."

Although I have seen asci in *Discosia alnea*, Fr., I have not yet observed them in *D. Artocreas*, Fr. In my former paper I conjectured that the sporidia of the latter species were formed in asci, which deliquesce at an early stage. This is by no means improbable, although the sporidia of *D. Artocreas* are certainly sometimes borne singly upon sterigmata. In the perfect state of *Sphæria pulicaris*, Fr., the sporidia are produced in asci, whilst in the so-called *Hendersonia arcus*, B. & Br., which I believe to be only the stylosporous condition of *S. pulicaris*, similar sporidia are borne upon sterigmata. In the stylosporous condition of *D. Artocreas*, the second filiform appendage is not visible whilst the stylospores are attached to the hymenium, although the setum at the distal end is perfect.

380. S. (Discosia) alnea, Fr.! S. M. ii. p. 520. From the Scleromycetes Sueciæ no. 50. See remarks under no. 379.

381. S. glauco-punctata, Grev.! Fl. Edin. Fries (Adnotata) remarks, "*Sph. glauco-punctata* a *S. Rusci* (No. 347) haud differt." Cfr. Elench. ii. p. 103.

382. S. (Sphæropsis) palustris, Fr.! in lit. to Mougeot.

383. S. Sphæropsis) Vincæ, Fr.! in lit. to Mougeot.

384. S. setacea, Pers.; Fr. S. M. ii. p. 518. Named (I think) by Klotzsch.

Div. 28. Depazea.

385. S. (Hendersonia) cornicola, Dec.; Fr. S. M. ii. p. 530. Named by Berkeley.

386. S. (Depazea) vagans, Fr. S. M. ii. p. 532. Named by Berkeley.

387. S. (Depazea) Uvariæ, Berk.!

388. S. (Depazea) fraxinicola, MS. Named by Klotzsch.

389. S. Drymidis, Berk.!

390. S. (Depazea) pallor, Berk! Ann. Nat. Hist. ser. 1. vol. vi. p. 362, pl. ii. fig. 2.

391. S. (Depazea) graminicola, Berk.! Ann. Nat. Hist. ser. 1. vol. i. p. 207.

392. S. (Depazea) Brassicæ, Pers.! in lit. to Mougeot.

393. S. (Depazea) Dianthi, Fr. S. M. ii. p. 531. Named by Berkeley.

394. S. (Depazea) pisicola, Berk.!

395. S. (Depazea) ribicola, Fr. S. M. ii. p. 530. Named by Berkeley.

396. S. (Depazea) fuscella, Berk.!

397. S. (Depazea) Alismatis, Curr.!

I must not omit to add the concluding remarks with which Fries closes the "Adnotata" which have been noticed above. He says, "Alias structuræ differentias a nobis observatas v. c. *Sph. moriformis* hac vice transeo. Haud paucas vir laudatus observavit

ascigeras, quas equidem legi stylosporas, alias equidem ascigeras, ille vidit stylosporas. Multiplex nuclei varietas est causa cur noluerim genera admittere nisi aliis differentiis et habitu proprio confirmata. Quam plurimas vidi Sphærias sporis primo simplicibus, dein uniseptatis, demum triseptatis; limites inter sporas septatas Curr. et pseudoseptatas et endochromate multipartito difficiles. Equidem sporarum colorem accuratius censeo indicare affinitatem.

"Ut *Discosiæ*, *Chætomia*, &c., sic etiam *Phoma*, genus eximie naturale, inter ascigeros citanda. Recentiores *Phomatis* nomen ad *Zythias*, a me jam pridem dictas, perperam retulerunt, licet character nullo modo in has quadret. Ejusmodi nominum transpositiones confusionem necesse pariunt, quare caute evitandæ et corrigendæ."

With reference to the above remarks upon the structure of spores, I may observe that I make no distinction between what I have called *pseudoseptate* spores and spores with multipartite endochrome. I apply the term "pseudoseptate" to those spores in which the separate portions of the endochrome are in such close contact as to give rise to the appearance of septa where none really exist. It is quite likely that in all such spores true septa are eventually formed. The question as to the value of the *colour* of the spores is too extensive to be discussed at the end of this paper. In some genera (e. g. *Cordyceps*, *Xylaria*, *Hypoxylon*) the colour is very constant; in others, again (e. g. *Diatrype*, *Valsa*), there is much variety. Even closely allied species (e. g. *Valsa quaternata*, *V. turgida*) sometimes differ considerably in the colour of their sporidia.